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Before the Federal Communications Commission  
Washington, D.C. 20554

PR Docket No. 93-61

In the Matter of

Amendment to Part 90 of the  
Commission's Rules to Adopt  
Regulations for Automatic  
Vehicle Monitoring Systems

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FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

RM-8013

Dear Commissioners:

I would like to express my concerns regarding certain aspects of the Commission's proposal to expand Automatic Vehicle Monitoring (AVM) into a new Location and Monitoring Service (LMS) in the 902-928 MHz band.

As an Amateur Radio Service member operating a repeater in this band<sup>1</sup>, I have some familiarity with the other shared users of this frequency allocation as well as a stake in the outcome of this proceeding. Furthermore, as an Amateur Radio operator involved with narrowband VHF-UHF-Microwave experimentation, I am additionally concerned with potential loss of critical frequency space for propagation characterization and the advancement of weak-signal communication techniques.

*Accommodations already made.*

The Amateur Service has shared the band with AVM in a most responsible and interference-free way. Our narrowband modes operate at the extreme ends of the band, with the highest-spectral-density modes farthest from the center of the band, where our AVM neighbors serve the public with their low-spectral-density wideband systems.

The Amateur Service wideband modes, of which high-speed data and fast-scan television are but two examples, have been artfully located to not only interfere with AVM operators and clients, but have been delicately balanced to also avoid interference with the narrowband Amateur operations at the band edges. The sophistication and elegance of this voluntary frequency coordination as well as the effectiveness in accommodating all the users on the band should not be lost on the Commission.

It is important to note the changes that have evolved in the use of this frequency segment since its

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1. 927.55 MHz, Mt. Diablo, serves the greater San Francisco Bay metropolitan area.

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first availability to the Amateur Service. We have cooperated with AVM operators in the large metro areas where these systems first evolved. For example, this is documented in older editions of the *ARRL Repeater Guide* versus present-day listings (in the 900 MHz band) for areas with deployed AVM. The altered transmit-receive frequency spacing was specifically changed to address potential interference concerns with AVM, and has proven to be effective in practice.

The 902-928 band is a challenging environment. Nearby very-high-power paging operations at 930 MHz present massive interference potential to receiving systems operating at 927.2-927.9 MHz, the repeater output channel. Even using the highest-quality commercial mobile receivers there is often disruption to Amateur-service operations when mobile units are in metropolitan areas where paging transmitters are densely packed. We tolerate this interference as a condition of band use; this illustrates the degree of accommodation the Amateur Service has already shown.

Placing additional restrictions on the frequencies would destroy this balance. If the band edges erode, this effectively would banish repeater users, who comprise at least half the total of the users.

Other comments regarding relocation of narrowband Amateur users must be scrutinized with the highest rigor as to their claims how they would use the band segments more effectively than skilled operators with the best equipment, who already experience a not inconsiderable degree of difficulty. This especially so, in the case of narrowband filers attempting to use inexpensive mass-distributed equipment.

#### *Amateur Use Increasing.*

Only a partial picture of the Amateur occupancy of the band can be gained by referring to the *ARRL Repeater Guide*. Many new systems have been either placed into service or are in the process of construction right now. For example, two Bay Area repeaters are newly (last eight weeks) on the air, one voice and one television; a system in Reno is to be activated shortly.

With the increase in repeater systems comes an increase in repeater users. The Amateur community has been distributing modification instructions, just within the last year or so, for many commercial radios. (e.g., General Electric 800 MHz units, Kokusai IMTS sets, Motorola *Micor* and *Syntor-X* models) As these projects come to completion, the number of people on the band is correspondingly growing in rapid fashion.

#### *Amateur VHF-UHF Repeater Capacity Full*

All existing 440-450 MHz channels (as well as the 144-148 MHz frequencies) in the large cities in California are occupied. Amateurs wishing to serve the community with a new repeater systems have no opportunity to do so there. There has been much interest in, activity on, and construction of 902-928 MHz repeater systems in spite of the relatively few<sup>1</sup> repeater channels that the band can accommodate. This expansion room would be lost with band restrictions.

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1. Few channels are available because of the Amateur Service's self-imposed band plan to avoid AVM interference. Repeaters are restricted in the San Francisco and Los Angeles areas to a 25 MHz TX-RX split.

### *Economic Adverse Impact.*

A long-standing fixture in Amateur culture has been the recycling of obsolete commercial equipment by retuning it from commercial frequencies to adjacent Amateur bands. This serves the public interest in two ways: in efficiently employing resources that would be otherwise thrown away, and by allowing the young and the poor access to frequencies without a costly cash investment, by virtue of their investment of labor. These operators could be disenfranchised by the potential loss of the band.

If access to the band were removed, the investment the Amateur community has in equipment – paid for out of their own pocket – would be worthless. The wide gap in frequency to the adjacent Amateur bands make it not possible to economically convert. This would cause hardship to the current users.

Affected would be not only the base stations in the homes of users, but also mobile units installed in vehicles. A large number of people active on the band operate multiple radios, with the loss of value being especially profound in those cases. In addition, the hilltop systems consisting of transmitters, receivers, amplifiers, and antennae would lose all value.

Weak signal operators having to move closer to the wideband activity in the band center will find that the increased noise floor from the spread transmissions diminishes the useful information that accrues from the experiments conducted there; it is possible that *no* weak-signal work will bear fruit in an altered frequency allocation, hence the likelihood of real economic harm.

### *Exclusion of Amateurs Considered Harmful.*

Emergency communication, so vital in disaster relief, would suffer as a result of modifying the existing structure that allows the use of repeaters near the band edges. At a disaster control center, multiple concurrent transmitters on a single band often block the local receivers, rendering them useless. Having an alternate band allows simultaneous operations at a disaster control center. The benefit to the public is considerable.

Excluding the amateur narrowband operations near the band edges would result in the dismantling of many systems in place today that can assist in disaster relief and emergency mitigation. I live in an area of high seismic activity inhabited by a population of several millions. It is of the highest utility and greatest public benefit to have multiple frequency-diverse standby communications systems operational and staffed with trained personnel. The effective response to the Oakland fire, for example (a stellar example of Amateur-aided emergency service), would have been nearly useless if multiple channels had not been available.

### *Narrowband Weak-Signal Work Recognized as Beneficial.*

The Commission has precedent for recognizing the utility, benefit, and protection needed for narrowband weak-signal work, most recently in its proceedings regarding the low-end of the Amateur 222 MHz band.

***Future Benefits Lost.***

### Unique Band Features

The special home near 902 MHz where experiments of this type are done would be lost if other proposals, which advocate excluding Amateur Service operations here, are adopted. If this segment is taken away, the corresponding benefits that accrue from its use would be lost as well.

There are many other frequencies that non-vehicle monitoring systems can utilize; inventory control systems on 460 MHz, and the 170 MHz allocation, to name but two. Additionally, the further improvements in the state-of-the-art for power generation and detection at microwave frequencies offer fixed base systems (ones not dependent on wide area propagation) economically efficient

Amateur Service has been shown to be a responsible "good neighbor" and provider of services advancing the public good; the Service should continue to utilize the entire band.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read 'W. J. Kaiser', with a long horizontal flourish extending to the right.

William J. Kaiser, *N6OLD*  
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